

HGSR Series High Voltage Mercury Reed Relays

High voltage Mercury Reed Relay

1 Features

- ◆ High-power mercury reed relay, dielectric strength up to 4500VDC
- ◆ High carry current capability
- ◆ High insulation resistance, up to $10^{11}\Omega$
- ◆ Low contact resistance, long-life hermetically sealed contacts
- ◆ External magnetic and electrostatic shielding
- ◆ Custom designs available, RoHS compliant

2 Performance Data

Parameter	Unit	HGSR□-1A	HGSR□-2A	HGSR□-□C
Contact rating	W	100		
Max. switching voltage (Max DC/Peak AC)	V	2000 (at 1.0mA)		
Max. switching current (Max DC/Peak AC)	A	2.0		
Max. carry current	A	8.5 (at 30°C)		
Pulse current	A	100A (at 30°C, 3ms ON 97ms OFF)		
Contact resistance	mΩ	80		
Dielectric strength				
Between open contacts	V	3000/3500/3800/ 4000/4500		
Between contacts and coil	V	4500		
Between contacts and shield case	V	4500		
Insulation resistance	Ω	10^{11}		
Operate time	ms	2.0	2.0	1.5
Release time	ms	2.0	2.0	1.5
Vibration (0~2000Hz)	G	20		
Shock (11 ms, 1/2 sine wave)	G	50		
Operating temperature	°C	-20~+70		
Storage temperature	°C	-35~+105		
Expected life	Ops	5×10^7 (at 500VDC, 100mA)		
Dimensions	/	See dimension drawings		

3 Coil Data

Model	Rated voltage (VDC)	Pick-up voltage (VDC)	Drop-out voltage (VDC)	Max. voltage (VDC)	Coil resistance
HGSR05-1□	5	4	0.5	6.5	120

Model	Rated voltage (VDC)	Pick-up voltage (VDC)	Drop-out voltage (VDC)	Max. voltage (VDC)	Coil resistance
HGSR05-2□	5	4	0.5	6.5	60
HGSR12-1□	12	9	1	16	600
HGSR12-2□	12	9	1	16	200
HGSR24-1□	24	18	2	29	2000
HGSR24-2□	24	18	2	29	1200

Coil resistance unit: $\pm 10\%$ Ω at 20°C

4 Part Number Code

Code format: HGSR □ - □ □-(XXX)

Positions: ① ② ③ ④ ⑤

Code	Item	Description
①	Series	HGSR
②	Coil voltage	05: 5VDC, 12: 12VDC, 24: 24VDC
③	Contact form	1A: 1 Form A, 2A: 2 Form A, 1C: 1 Form C, 2C: 2 Form C
④	Voltage rating	01: 3000VDC, 02: 3500VDC, 03: 3800VDC, 04: 4000VDC, 05: 4500VDC
⑤	Special characteristic number	Per customer requirements

5 Cautions for Use

- Do not install the relay where it is directly exposed to rain, in strong magnetic fields, or near objects with heat radiation.
- Switching inductive or capacitive loads may generate peak voltage or current; a protection circuit is recommended, otherwise the relay may be damaged.
- Avoid excessive packing density during use, as this may affect the electrical characteristics of the relay.
- Excessive mechanical shock may cause relay malfunction.
- For wave soldering: max. temperature 260°C, max. 5 s.

6 Disclaimer

This document is for customer reference only. Specifications are subject to change due to product improvements without prior notice. The final specifications of each product are subject to the Product Commitment and approved samples.

Performance requirements vary by application. Customers should select the appropriate product based on actual operating conditions. If in doubt, please contact us.